

Presence of brown hydra *Hydra oligactis* PALLAS, 1766 (Hydrozoa: Anthoathecata: Hydridae) in Large Lake of Monticolo / Montiggl (South Tyrol, Prov. Bolzano, Italy)

Currently, five valid species of the only genus *Hydra* in the family Hydridae (phylum Cnidaria: class Hydrozoa: order Anthoathecata) are known to occur in Europe: *H. circumcincta*, *H. oligactis*, *H. oxycnida*, *H. viridissima* and *H. vulgaris* (HOLSTEIN 1995, CARTWRIGHT & COLLINS 2007, SCHUCHERT 2010, 2012). HELLRIGL (1996) reported in his zoological check-list the presence of two taxa of Hydridae in South Tyrol: *Chlorohydra viridissima* (current valid name *Hydra viridissima* (SCHUCHERT 2014) and *Hydra* sp., common name “Grauer Süßwasserpolymp” (probably *H. vulgaris* (?)). Furthermore, he hypothesized the presence of “Gestielter Süßwasserpolymp” *Pelmatohydra oligactis*, currently an unaccepted synonym, valid name *H. oligactis* (SCHUCHERT 2011), but, to author’s knowledge, its presence in the Bolzano / Bozen Province was not confirmed until now. This paper reports the first record of *H. oligactis* in South Tyrol.

In August 2015 medusae of *Craspedacusta sowerbii* LANKESTER, 1880 were sighted for the first time in Large Lake of Monticolo / Montiggl (46°25’20”N 11°17’21”E, in the Bolzano / Bozen Province, Italy) (MORPURGO & ALBER 2015). The lake is located at 492 m a.s.l. and has a surface area of 17,8 hectares, a maximum length of about 700 m, a maximum width of about 300 m and a maximum depth of about 11,5 m. It is a natural lake of glacial origin and a bathing lake; chemical data classify it as meso-eutrophic (THALER & TAIT 1987). In the summer months a net thermal stratification of the lake water with a thermocline at a depth of about 5-6 m is observed. In winter, part or all the surface of the lake freezes.

During the last two years, the author went scuba diving in search of polyps of *C. sowerbii* ten times in the ice-free months from April to November. Instead of polyps of *C. sowerbii* polyps of *Hydra* were observed and many times photographed on each diving date. All underwater photographs were taken with a digital reflex camera: Nikon D80 with macro lens Nikon AF Micro-Nikkor f/2.8 60 mm, in underwater housing Sealux CD80, and one flash Sea & Sea YS-110 alpha, in manual mode. Water temperature and depth during the underwater observations and sampling were measured by a scuba dive computer suunto vyper. The photographed specimens were subsequently identified as brown hydra *Hydra oligactis* PALLAS, 1766. Although normally a reliable identification of *Hydra* species requires an examination of the intact nematocysts, the specimens were recognizable by their distinct pedicel, which is thinner and more transparent than the rest of the body, and by the characteristic unequal length of tentacles in young buds (SCHUCHERT 2010). Based on the high-resolution images, Dr. Peter Schuchert of the Natural History Museum of Geneva (Switzerland), curator of World Hydrozoa database, confirmed the determination of the species.

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Hydra oligactis is widespread and common in Europe, including the British Isles and Iceland, also in Russia, Turkey, and North America (HOLSTEIN 1995, HÜSEYİN & SÜLEYMAN 2002, SCHUCHERT 2010). It is a popular laboratory species and one of the best investigated hydroids (SCHUCHERT 2010, TÖKÖLYI et al. 2017).

H. oligactis is very frequent in Large Lake of Monticolo / Montiggl and was found between a depth of 1 and 5 m on different substrates: algae (*Chara* sp.), aquatic plants, and mussel shells. In April 2017 with a water temperature of 14°C, the species was particularly abundant on tops of the aquatic plant *Ceratophyllum demersum* LINNAEUS, 1753, between

Fig. 1: Underwater picture of *Hydra oligactis* on the aquatic plant *Ceratophyllum demersum* at 3 m depth in Large Lake of Monticolo / Montiggl, taken on 9th April 2017
(Photo: Massimo Morpurgo).



a depth of 2 and 3 m (Fig. 1). Up to 25 polyps were counted on one top of *C. demersum*. The polyps were reddish-brown with long extended tentacles, reaching lengths of 2-3 times the body length and showing vegetative budding with characteristic unequal length of tentacles in the buds. Gonads were visible on the polyp bodies.

The invasive alien zebra mussel *Dreissena polymorpha* (PALLAS, 1771) was observed for the first time in Large Lake of Monticolo / Montiggli in 2001 (MORPURGO & THALER 2002, CIANFANELLI et al. 2010). During the following years *D. polymorpha* spread widely in the lake and formed typical clusters with an associated epifauna. *H. oligactis* was found at 1 m depth on shells of live zebra mussels together with the freshwater bryozoan *Plumatella* sp. (Fig. 2). STANKOVIĆ & TERNJEJ (2010) described the relationship between *H. oligactis* and *D. polymorpha* as commensalism. The hydrozoan benefits from *D. polymorpha*, as the water current created by the feeding bivalve brings food directly to the polyps. Probably, also the filter feeding bryozoan *Plumatella* benefits from the water current generated by incurrent and excurrent syphons of *D. polymorpha*.

Specimens of *H. oligactis* were collected in Large Lake of Monticolo / Montiggli at 2 m depth on the aquatic plant *C. demersum* on 9th September 2017 and fixed in ethanol 70% for the scientific collection of the Museum of Nature South Tyrol (*H. oligactis* collection number NMS Bozen/Bolzano EVV 6).

It may be assumed that *H. oligactis* is also present in other lakes and water bodies in South Tyrol. Further studies are needed to investigate its real distribution in the Bolzano / Bozen Province.



Fig. 2: Underwater picture of *Hydra oligactis* and freshwater bryozoan *Plumatella* sp. on shells of live zebra mussels *Dreissena polymorpha* at 1 m depth in Large Lake of Monticolo / Montiggli, taken on 7th August 2016 (Photo by Massimo Morpurgo).

Acknowledgments

The author thanks Dr. Peter Schuchert of the Natural History Museum in Geneva (Switzerland), curator of the World Hydrozoa database, for confirmation of the hydrozoan species identification and Dr. Thomas Schwaha of Department of Integrative Zoology, University of Vienna (Austria) for confirmation of identification of the freshwater bryozoan genus *Plumatella*. The author also thanks the colleague of Museum of Nature South Tyrol Dr. Thomas Wilhalm, conservator for Botany, for his determination of the aquatic plant *Ceratophyllum demersum*. Last but not least, special thanks to Andrea Falcomatà for scuba diving together.

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